REMARKS

Claims 1-11 and 15-20 have been amended. No new matter has been added. Applicant reserves the right to pursue the original claims in this or other applications.

Claims 1-11 and 15-20 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pub. No. 2004/0004917 (Lee). The rejection is respectfully traversed.

The present application deals with errors occurring in the spare area (SA) of an information recording/reproducing apparatus. When writing is performed before the format process, and replacement of a defective block in a spare area is required, the alternative destination for the defective block does not have a format process completed. Without checking the function of the alternative destination an error may occur during placement at the alternative destination. If an error does occur, then replacement must be performed again, and format speed is reduced.

A format process is carried out before using an optical disk. The format process has two stages. The first stage is the "certify" process. This process writes data of a specific pattern to the optical disk. This stage determines whether data can be normally written to the optical disk.

The second stage is the "verify" process. This process reads the data written during the "certify" process to determine whether data can be normally read from the optical disk. By applying error standards that are more strict than those required during normal reading, the verify process helps eliminate portions of the disk that have borderline performance. Expressed differently, the format process errs on the side of excluding portions of the optical disk that may prove problematic during future reading and writing tasks.

The "verify" process can also be performed while recording user data, independent of the "certify" process that normally precedes it during a format process. The verify process – whether conducted during a full format of the disc, or during writing of user data – finds that certain blocks of the Data Areas do not meet performance standards. Based on their poor performance, data that would have been written within those blocks must now be written on another portion of the optical

disk. Generally, if an error occurs in a Data Area, the unwritten data is written into the Spare Area that immediately precedes the Data Area. This technique allows the unwritten data to be written into an already-formatted Spare Area block. This guarantees that the unwritten data is written on an effective portion of the optical disk. If the unwritten data were written into a Spare Area that had not undergone the format process, the Spare Area could have its own performance problems, thereby hindering the progress of the writing process.

Spare areas, however, are smaller than their corresponding Data Areas. Consequently, when large amounts of errors occur within a specific Data Area, that Data Area's corresponding Spare Area may fill up, necessitating finding another location for the unwritten data. If format processes were always performed before writing actual user data to the optical disk, then a simple solution would be to just write the unwritten data to a previously formatted Spare Area.

Writing user data prior to performing a format process, however, can result in unwritten data from the Data Area being transferred to a Spare Area where no format process has been conducted. Without a format process, no defect check of the Spare Area has been conducted, and there is an increased probability of an error occurring and, the speed of the format process is reduced.

The present application deals generally with an apparatus capable of conducting a format process such that Spare Areas – even when the verify process is being conducted during the writing of user data – are screened to ensure that when unwritten data cannot go to a previously formatted Spare Area corresponding to the Data Area (because it is full), a Spare Area having already undergone formatting is located. This formatting, however, *does not* occur during a full format of the media. If no already-verified Spare Area is located, then the Spare Area selected may be formatted prior to writing the data intended for the Data Area.

In contrast to the present invention, Lee deals with the shortcomings of an optical disk's defect table. The defect table keeps the addresses of spare blocks located within Spare Areas, these spare blocks are used to store information that was intended for Data Areas determined to be defective. For example, if a disk drive reaches a defective area of a Data Area, it accesses the

record in the defect table to determine what Spare Area it should access to find the missing information.

One shortfall of the defect table is that it categorizes every block within the Spare Areas by its status. A block is either used, free, or defective. This categorization is beneficial for certain situations, but it has shortfalls. One shortfall is that during data accessing, when a defective block within a Spare Area is located, there is no fast method for determining if the defective block within the Spare Area has already been marked defective within the defect table. Instead of searching by the defective block's location and reading the defective block's status, the device must go to the defect table's list of defective blocks, and search through *every entry* until it determines whether the address of the recently-located defective block is present.

Instead of having the device search every "defective" entry until it determines the presence or non-presence of the recently-located defective block, Lee proposes a separate status table. Lee's separate status table is generated from the defect table, and stored on the memory of the disk drive. Unlike the defect table, however, Lee's status table would have a corresponding entry for every block of every Spare Area. Accordingly, when a defective block is encountered within a Spare Area, the device would merely reference the *single* corresponding entry in Lee's status table to determine whether the status table identifies the defective block as used, free, or defective.

In short, the present application relates to finding and using an already formatted Spare Area – the formatting having not occurred during a full format of the media – for use when a defective area of the optical disk is found. Lee, on the other hand, discusses a faster method of determining if a defective block within a Spare Area has already been labeled "defective."

Claim 1 recites an information recording/reproducing apparatus that comprises "means for performing a certify process and a verify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the device, on an unformatted information recording medium … and selecting an alternative destination … such that … the alternative destination is selected from a pre-certified and pre-verified

non-adjacent alternative area wherein the pre-verification is performed at the time of recording user data, when an unused field does not exist in the adjacent alternative area." Lee fails to teach at least these important limitations.

The Office Action relies on FIG. 5, element 38 and FIG. 6 as disclosing "means for performing a certify process and verify process." The present application discloses a certify process that "writes specifically patterned data" and a verify process that "uses defect detection conditions stricter than the normal reproduction standards of the device" as recited by claim 1. Support for this claim language is found in ¶ 0006 of the present Application, and the limitation is not met by Lee's control circuit 38 (FIG. 5). Additionally claim 1 recites "performing a certify process … and a verify process … on an unformatted information recording medium." Lee's FIG. 6 diagrams the status table 50 locations as they correspond with the spare blocks on the optical disk track 24, and does not teach how these statuses are obtained, or during what process.

Additionally, the Office Action's reliance on Lee FIGS. 7A-7B and ¶¶ 0051-0052 is misplaced. The paragraphs cited by the Office Action discuss how finding newly defective portions of the optical disk will result in portions of Lee's status table being changed from "free" to "used." This occurs when defective blocks are discovered, and the data intended for the defective block is moved to a block in a Spare Area. Accordingly, the status table – which tracks the status of the Spare Area blocks as either "free," "used," or "defective" – must change the status of a Spare Area block from "free" to "used." While an alternative area is selected, Lee does not teach an "alternative destination [that] is selected from a pre-certified and pre-verified non-adjacent alternative area wherein the pre-verification is performed at the time of recording user data" as recited by claim 1.

Claim 2 depends from claim 1, and should be allowed along with claim 1, and on its own merits. Specifically, claim 2 recites "means for performing the certify process and the verify process on the nonadjacent alternative area having the alternative destination … and means for assigning the alternative destination in the non-adjacent alternative area in which the error occurs." As presented for claim 1, the terms "certify" and "verify" have specific meanings, and Lee does not

teach "specifically patterned data," nor "us[ing] defect detection conditions stricter than the normal reproduction standards of the device." The Office Action's reliance on ¶¶ 0048-0050 as teaching these limitations is misplaced. The cited paragraphs explains how Lee's status table has a field for every spare block, and that every field of the status table will be marked with either a "U" (used), "D" (defective), or "F" (free). The status of these spare blocks as either used, defective, or free, does not indicate whether a certify or verify process has been conducted, nor does it teach "means for performing the certify process and the verify process" as recited by claim 2.

In response to these arguments, the Office Action now turns to ¶¶ 0057-0058 as teaching these limitations. The Office Action's reliance, is misplaced. The cited paragraphs merely deal with updating the defect table during periods when the optical disc is being accessed. The defect table is stored on memory, not on the disc (only when the disc is going to be ejected is it written to a portion of the disc). Updating the defect table has nothing to do with a "means for performing the certify process and the verify process on the nonadjacent alternative area having the alternative destination when the error occurs in the certify process or the verify process and the alternative destination is to be assigned" as recited by claim 2. All Lee discloses is that when defects occur, the defect table will be updated. Lee is not concerned with how or where the data will be moved. The present application, however, describes an apparatus for performing a certify and verify process on an un-certified and un-verified non-adjacent alternative area.

Claim 3 depends from claim 1, and should be allowed along with claim 1, and on its own merits. Specifically, claim 3 recites "means for performing the certify process and the verify process on the non-adjacent alternative area before the user data area" and "means for registering as a prohibited-use position, a position in the alternative area at which an error occurs in the certify process or the verify process." For all the reasons presented for claim 2, Lee does not teach "means for performing the certify process and the verify process." The Office Action's reliance on ¶ 0043 is misplaced for all the same reasons offered for element 38 (FIG. 5) while presenting claim 1. Specifically, mere recitation of a control circuit 38 within a functional block diagram of an optical disk drive 30 is insufficient to teach a certify and verify process. Similarly, ¶ 0044 does not teach the claimed "means for registering" where ¶ 0044 merely discloses a status table that records the

usage of all the spare blocks, but that usage is not determined when an error "occurs in the certify process or the verify process" as recited by claim 3.

Claim 4 depends from claim 1, and should be allowed along with claim 1, and on its own merits. Specifically, claim 4 recites "means for maintaining a position at which the error occurs when the certify process or the verify process is performed on the one of the user data areas" and "means for assigning the alternative destination to the user data area having the maintained position after the certify process and the verify process are performed on the non-adjacent alternative area." For all the reasons presented previously for claims 1-3, Lee does not teach a certify and verify process, and consequently cannot teach either the "means for maintaining a position" or the "means for assigning" elements recited by claim 4.

Claim 5 recites an information recording/reproducing apparatus comprising "a formatting part that performs a format process with respect to the user data areas and the alternative areas in a predetermined sequence; a defect field detection part that detects a defect field by performing a certify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the apparatus, while recording user information before the format process is completed for all the user data areas and the alternative areas." Lee fails to teach at least these important limitations.

FIG. 6 and ¶ 0045 show and describe, respectively, status table 50 locations as they correspond with the spare blocks on the optical disk track 24. They do not teach "a defect field detection part that detects a defect field by performing a certify process ... and a verify process ... while recording user information before the format process is completed for all the user data areas and all the alternative areas." Lee does not disclose a "defect detection part that detects a defect field by performing a certify process ... and a verify process" as recited by claim 5. Lee does not disclose how it detects defects – either through a standard format process, or during the writing of user information. Lee does not disclose "detect[ing] a defect field while recording information before the format process is completed for all the user data areas and all the alternative areas" as

recited by claim 5. Lee does not disclose when its defects are detected in relation to the format process.

Additionally, the Office Action relies on FIG. 7A as disclosing "a formatting part." FIG. 7A shows that when problems occur while accessing an optical disk status table 50 is updated. Updating a block's status only reports on the status of the block within the Spare Area. It does not teach "a formatting part that performs a format process with respect to the user data areas and the alternative areas in a predetermined sequence" as recited by claim 5. Lee only discloses updating the report; Lee does not disclose any specifics regarding how the data is derived to update the reports.

Finally, ¶ 0051 – cited as teaching an alternative field in another alternative area to which the format process has already been performed – merely discusses updating the status table when the optical disk drive uses a block of a Spare Area to write data intended for a defective portion of a Data Area. Paragraph 0051 does not teach that the data intended for the Data Area occurs while "recording user information before the format process is completed for all the user data areas and all the alternative areas" as recited by claim 5.

Claim 6 depends from claim 5, and is allowable along with claim 5, and on its own merits. Specifically, claim 6 recites "a formatted alternative area determination part ... a second alternative field assigning part ... and an alternative field format process part that performs a certify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the apparatus, on an unformatted information recording medium on the alternative field." The paragraphs cited by the Office Action do not disclose "an alternative field format process ... on an unformatted information recording medium on the alternative field." It is impossible to determine how the blocks of Lee obtained their free status, it may have occurred during a whole-disc format process, as there is nothing limiting it to an "unformatted information recording medium" as recited by claim 6.

Claim 7 depends from claim 6, and is allowable along with claim 6, and on its own merits. Specifically, claim 7 recites limitations similar to those presented for claim 3, and is allowable for all the reasons presented for claim 3.

Claim 8 depends from claim 6, and is allowable along with claim 6, and on its own merits.

Claim 9 depends from claim 7, and is allowable along with claim 7, and on its own merits.

Claim 10 recites an information recording/reproducing apparatus comprising "an alternative area format process part that performs a format process including a certify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the apparatus on an unformatted recording medium, wherein the alternative areas are formatted separately from the user data areas," "a formatting part that performs a format process with respect to the user data areas in a predetermined sequence with the format process in the alternative areas" and "a defect field detection part that detects a defect field existing in the alternative area at the time of the format process by said alternative area format process part before the format process is completed with respect to all the user data areas and all the alternative areas." Lee fails to teach at least these important limitations.

The Office Action relies on FIG. 7A as teaching the first limitation presented above, and FIG. 6 along with ¶ 0045 as teaching the second limitation presented above. Applicant submits that the Office Action's reliance on these disclosures is misplaced. FIG. 7A is used to show that when problems occur while accessing an optical disk, Lee's status table 50 is updated. Updating the status table to reflect the "used," "free," or "defective" status of a block within a Spare Area merely reports on the status of blocks within the Spare area, and does not teach "an alternative area format process ... including a certify process ... and a verify process" as required by claim 10. Similarly, updating a status table does not teach a formatting process that "performs a format process ... on an unformatted recording medium." Lee does not disclose when, if at all, its format process is conducted. Lee certainly does not disclose a format process limited to formatting "an unformatted recording medium" as recited by claim 10.

Additionally, FIG. 6 and ¶ 0045 show and describe, respectively, status table 50 locations as they correspond with the spare blocks on the optical disk track 24. They do not teach "a defect field detection part that detects a defect field existing in the alternative area at the time of a format process," as no format process is being conducted. Finally, based on Lee not teaching a format process, Lee cannot teach "perform[ing] a format process on the alternative areas separately from the user data areas" as recited by claim 10.

Claim 11 recites an information recording/reproducing apparatus comprising "a formatting part that performs a format process, including a certify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the apparatus ... an error detection part that detects an error that occurs at the time of the format process on an unformatted recording medium ... and an alternative field assigning part that assigns, after the format process ends, an alternative field for replacing the defect field." For all the reasons presented for claim 10, Lee does not teach "a formatting part" or an "error detection part" as recited by claim 11.

Claim 15 recites a computer-readable recording medium recording a program for causing a computer to carry out "a formatting part ... that performs a format process, including a certify process that writes specifically patterned data and a verify process that uses defect detection conditions stricter than the normal reproduction standards of the program on an unformatted recoding medium ... and a first alternative field assigning procedure that assigns ... a non-adjacent alternative field in another alterative area to which the format process has already been performed according to a predetermined sequence." For all the reasons presented for claim 10, Lee does not teach "a formatting part" as recited by claim 15.

Claims 16, 17, 18, 19, and 20 recite limitations similar to those presented for claims 10, 11, 5, 10, and 11, respectively, and should be allowed for all the reasons presented for these respective claims. Accordingly, the rejection should be withdrawn, and the claims allowed.

In view of the above, Applicant believes the pending application is in condition for allowance.

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